

Improving the evidence base for pre-travel advice: the importance of surveillance of travel-associated infection

WHY IS SURVEILLANCE OF TRAVEL-ASSOCIATED INFECTION IMPORTANT?

Foreign travel by UK residents is increasing, especially to destinations with more tropical climates that are often low-income countries with a high burden of infectious diseases. In 2003, 61.4 million visits abroad were made by UK residents; this is greater than the estimated UK population for that year and nearly three times the number of visits in 1983.¹ Most visits are to European Union countries (around 70%), but the number of UK residents visiting more exotic destinations such as Africa, Asia, the Caribbean, and south and central America, increased annually by an average of 11% between 1995 and 2002 compared with only a 5% increase for Europe. These trends are likely to continue and through travel, UK residents are at risk of contracting infectious diseases to which they are not normally exposed in the UK. The increasing importance of travel-related illness has been highlighted by recent articles in the literature,^{2,3} and primary care is very often the first point of contact both for pre-travel advice and for travellers returning to the UK with an illness.^{4,5} Primary care practitioners need the best quality information about specific risks associated with particular destinations, both to be able to advise the patients who consult them before they travel and also to be able to manage those who return unwell.

The National Travel Health Network and Centre (NaTHNaC) was established in 2003 with the key goal of 'protecting the health of British travellers' by promoting clinical standards in travel medicine. To do this, NaTHNaC provides expert guidance and training for health professionals on pre-travel health issues,

administration and quality assurance of yellow fever vaccination centres in England, and a telephone pre-travel advice service for queries about travellers with special health needs and those with complicated travel itineraries (Monday to Friday 9am–12pm and 2pm–4.30pm: 020 7380 9234). General travel advice information is also available free on the NaTHNaC website at <http://www.nathnac.org/> and is updated regularly. As part of NaTHNaC, the Travel Health Surveillance Section (THSS) at the Health Protection Agency, Communicable Disease Surveillance Centre was established to provide surveillance data on the number and types of illnesses in England, Wales, and Northern Ireland that are associated with travel. This is important both to improve the current evidence base on which pre-travel advice is given (for example, what immunisations are necessary for which destinations), and also to improve clinicians' awareness of likely illnesses in returning travellers so that prompt and accurate diagnoses may be made.

There are additional reasons why surveillance of travel-associated infection is important. Although estimates have been made,^{6,7} there is little accurate information available about the financial costs to the NHS, travellers and society that arise from travel-associated infectious disease. Good quality surveillance data may enable the costs associated with travel-associated diseases to be defined more accurately, and may help to determine the cost-effectiveness of preventive measures. Furthermore, surveillance data helps to determine the most appropriate public health responses to imported infections in particular groups (for example, distinguishing between illness in new entrants to the UK, as opposed to illness acquired by UK residents through travel) or to global disease threats (for example, pandemic influenza or Severe Acute Respiratory Syndrome). In addition, for infections that can be contracted either in the UK or abroad, it is important to be able to determine how much disease is 'home grown' in order for public health

Table 1. Capture of information on recent travel abroad for some important travel associated infections, England, Wales, and Northern Ireland in 2002.

Infection	Total reports for 2002	Number where information was provided about recent travel abroad (%)
Gastrointestinal infections	146 843	8831 (6)
Typhoid and paratyphoid fever	290	193 (67)
Hepatitis A (England & Wales only)	1314	54 (4)
Malaria (UK)	1944	1556 (80)
Schistosomiasis	99	30 (30)
Dengue fever	44	16 (36)
Leishmaniasis	24	23 (96)
Legionnaires' disease (England & Wales only)	370	370 (100)
Lyme disease (England & Wales only)	340	290 (85)
Filariasis	21	6 (29)

targets in the UK to be monitored: for example, the Food Standards Agency's target to reduce food borne disease in the UK by 20% by 2006.⁸ Finally, illness in a returning traveller can indicate that an outbreak is occurring abroad and may assist with the detection of emerging or re-emerging infections, especially in low-income countries whose own health or surveillance systems may not be robust.

WHAT DATA IS CURRENTLY AVAILABLE ON TRAVEL-ASSOCIATED INFECTIONS?

The THSS assessed current surveillance of travel-associated infectious disease in England, Wales, and Northern Ireland, and published a baseline report including data up to 2002.⁹ This report demonstrates limitations with the routine sources of data generally used for travel-associated illness (such as, voluntary laboratory reporting systems, Statutory Notification of Infectious Diseases, and enhanced surveillance systems). The major limitation is that for most diseases travel history information is not well captured, as shown for 2002 in Table 1.

Even for diseases that do not occur in the UK (such as schistosomiasis, dengue fever and filariasis) travel history is often not given and although capture of travel history is generally better for infections that are subject to enhanced surveillance (such as malaria, legionnaires' disease and Lyme disease), travel history for other routinely reported infections has worsened in recent years.⁹ For example, in 1980, 192 typhoid infections were stated to have been acquired abroad compared to 91 in 2002. In 1980 however, all laboratory reports of typhoid had information about whether or not the patient travelled abroad (although the country of acquisition was not always available), whereas only 67% contained

this information in 2002. Thus, the apparent decline in imported typhoid may be artefactual as a result of reduced capture of travel history; after 1994, typhoid was no longer subject to an enhanced surveillance system that included a travel history.⁹ Similarly, of the 1314 laboratory reports of hepatitis A in 2002, 96% had no information about whether or not the patient travelled abroad. As both typhoid and hepatitis A occur in the UK as well as abroad, reporting of travel history is essential, not only to assess the burden of these diseases in travellers but also to monitor their control in the UK.

This lack of information about travel history impacts on the evidence base on which pre-travel advice is given, and additional information that is important for public health purposes is also lacking in routine surveillance data. In particular, the reason for travel is known to be a key risk factor. For example, in the UK, more than half of all imported malaria cases where a reason for travel is known occur in those who have travelled to visit friends and family.¹⁰ These are mainly migrants to the UK who may not even consider taking antimalarial prophylaxis when they go 'home' since they may erroneously assume they are immune, or that for them malaria would be a mild illness. Knowing who the highest risk group is for any particular travel-associated infectious disease allows pre-travel advice and possible interventions to be targeted appropriately. At the moment, however, for most surveillance systems, information about the reason for travel is not captured. Neither is information available about prior immunisations or prophylaxis used, which means that the effectiveness of these interventions is difficult to judge. Furthermore, it is not possible, in most

cases, to distinguish between illness in new entrants versus travellers, which hinders design of constructive public health responses to imported infections.

HOW CAN GPs HELP TO IMPROVE THE EVIDENCE BASE FOR PRE-TRAVEL ADVICE?

Data capture for surveillance systems starts with clinicians, primarily through notification of disease or requests for laboratory investigations. A key development must be the improved capture of patients' travel histories along with other relevant demographic characteristics that identify particular risk groups. A small poster has been distributed directly to GPs to encourage them to report travel histories, advise them of the sorts of infections that are important in terms of travel, and give them the contact details for NaTHNaC.

Including the patient's travel history in requests to laboratories is not only important because it is required for effective surveillance, it also greatly enhances the diagnostic process (for example, by determining the range of investigations performed). A lack of, or insufficient, travel history prevents the laboratory from providing the most appropriate service and could therefore lead to delayed diagnosis or treatment of the patient's illness. Laboratories need to know destination and dates of travel. For surveillance purposes the reason for travel, such as holiday, business, visiting relatives, and any relevant immunisations or prophylaxis taken are also important.

Capture of appropriate and relevant surveillance information is not, however, the sole responsibility of clinicians as they need to be properly supported in this task by the systems in which they operate. In the ideal system the collection of anonymised surveillance data should

Box 1. Summary points.

- ▶ The number of visits abroad made by UK residents is increasing, especially to tropical destinations where travellers are more likely to encounter infectious diseases.
- ▶ The National Travel Health Network and Centre has been set up to provide authoritative, evidence-based guidance for health professionals giving pre-travel advice.
- ▶ Surveillance of travel-associated infection is important to provide the evidence base used for pre-travel advice, but capture of information on travel history needs to be improved.
- ▶ Primary care is usually the first point of contact for travellers seeking pre-travel health advice, as well as for ill returning travellers. GPs have an important role to play in helping to improve the surveillance of travel-associated infections and hence the evidence base on which pre-travel advice is given.

not impose any additional workload on clinicians, but should result automatically from data routinely recorded for clinical management purposes. Such issues should be taken into consideration in the wider development of the NHS information strategy. Furthermore, standardisation of methods used throughout the NHS for notifying illness and requesting laboratory investigations could facilitate improvements of data quality for surveillance systems in general, including surveillance of illness

acquired abroad.

Following the publication of the baseline report, regular and consistent monitoring of travel-associated infections is ongoing in the form of quarterly reports in the Health Protection Agency Communicable Disease Report Weekly (<http://www.hpa.org.uk/cdr/default.htm>) and annual web-based reports. These are available to both health professionals and the public and will allow measurement of changes in travel history reporting over time. The Health Protection Agency in association with NaTHNaC will continue to work towards the systemic changes that are required to improve current surveillance systems for illness acquired abroad, and to develop new systems of surveillance. These developments are necessary to improve the health of British travellers and to remain alert to the potential public health threats of illness acquired abroad.

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Copies of the flyer containing this information are available from the Travel and Migrant Health Section at the Health Protection Agency, Centre for Infections, 61 Colindale Avenue, London NW9 5EQ. E-mail tmhs@hpa.org.uk. Or from the National Travel Health Network and Centre, Hospital for Tropical Diseases, Capper Street, London WC1E 6AU. E-mail nathnac@uclh.org.